STATE OF NEW YORK

DEPARTMENT OF TRANSPORTATION

DESIGN AND CONSTRUCTION DIVISION

PROPOSAL FOR WATER WELL REPAIRS

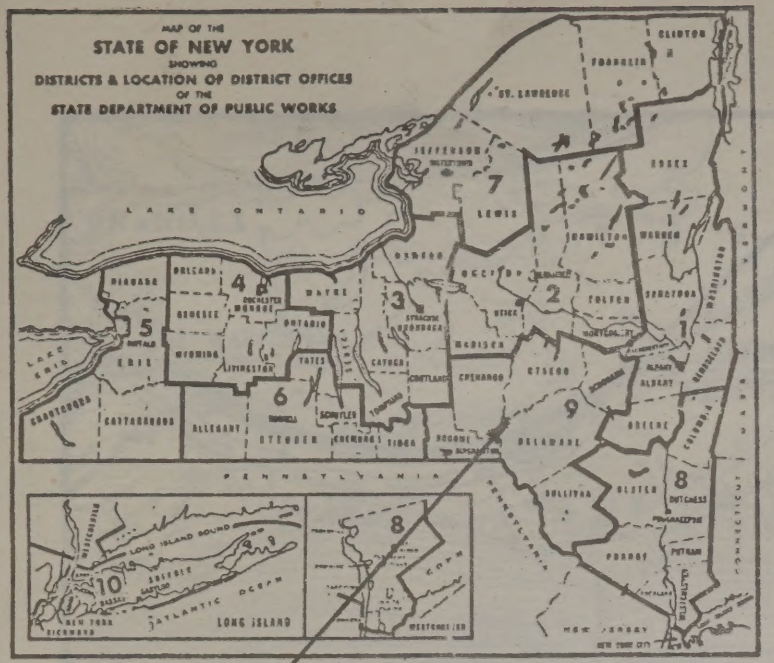
INTERSTATE ROUTE 508

UNADILLA - OTEGO

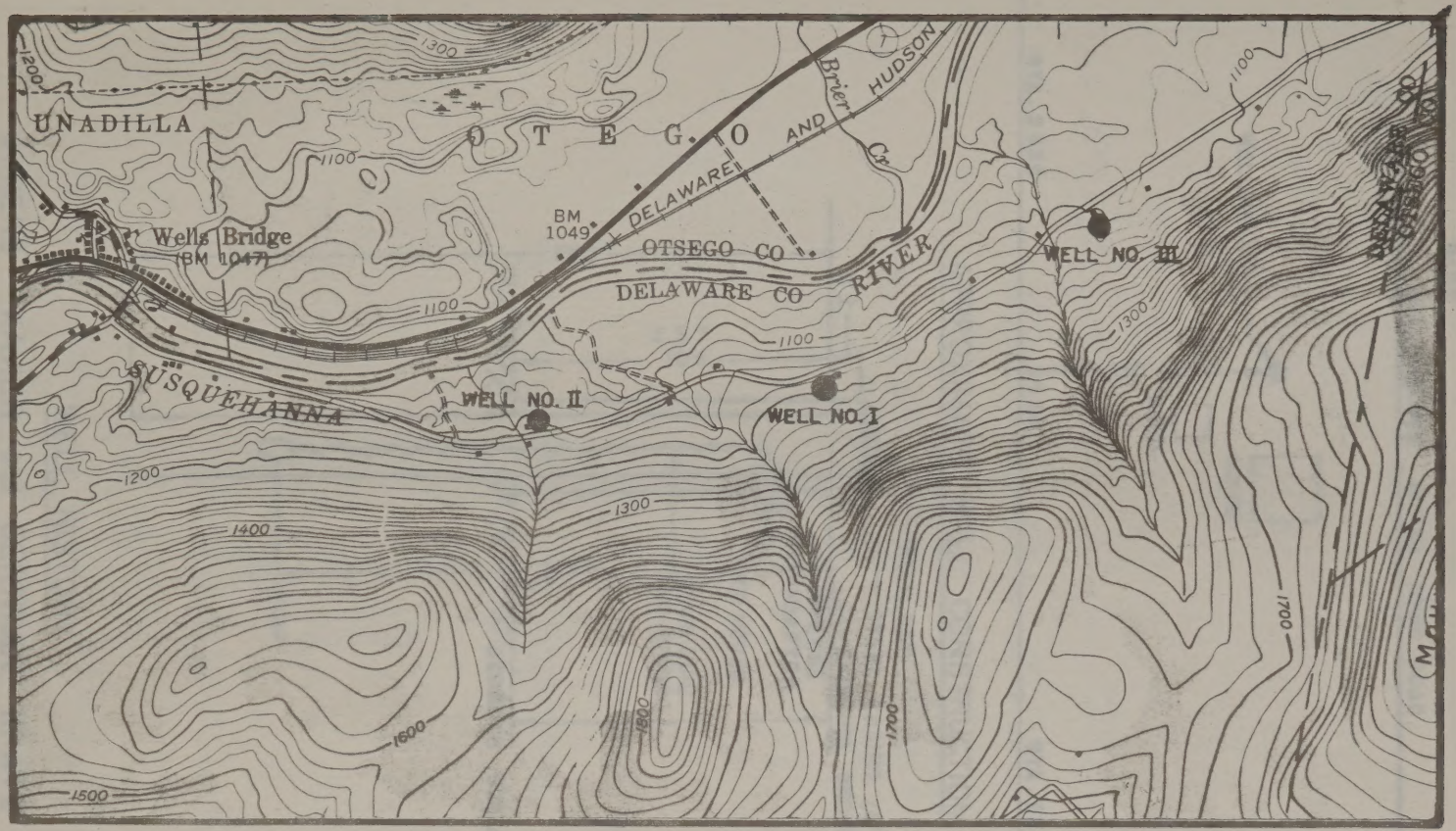
CONTRACT NO.- FAWR 74-2

DELAWARE COUNTY

ALL WORK CONTEMPLATED UNDER THIS CONTRACT IS TO BE COVERED BY AND IN CONFORMITY WITH THE SPECIFICATIONS OF JANUARY 2, 1973 AMENDED BY ADDENDA NO. 1 EXCEPT AS MODIFIED IN THIS PROPOSAL



NYSDOT
Library
50 Wolf Road, POD 34
Albany, New York 12232



LOCATION PLAN

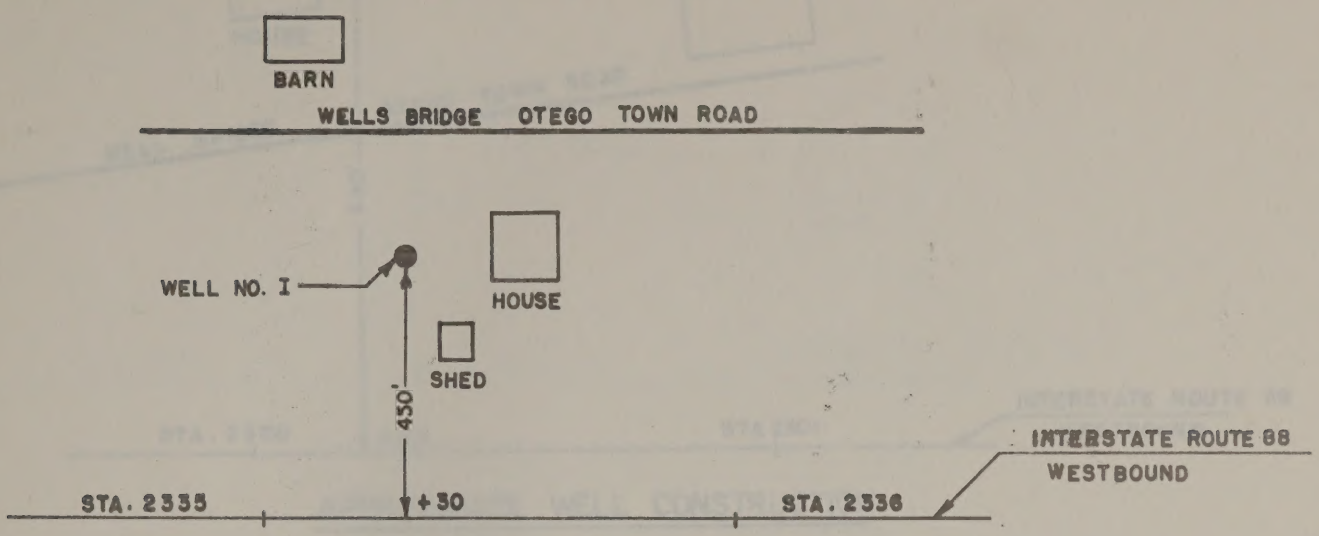
SCALE

1000 0 1000 2000 3000 FT.

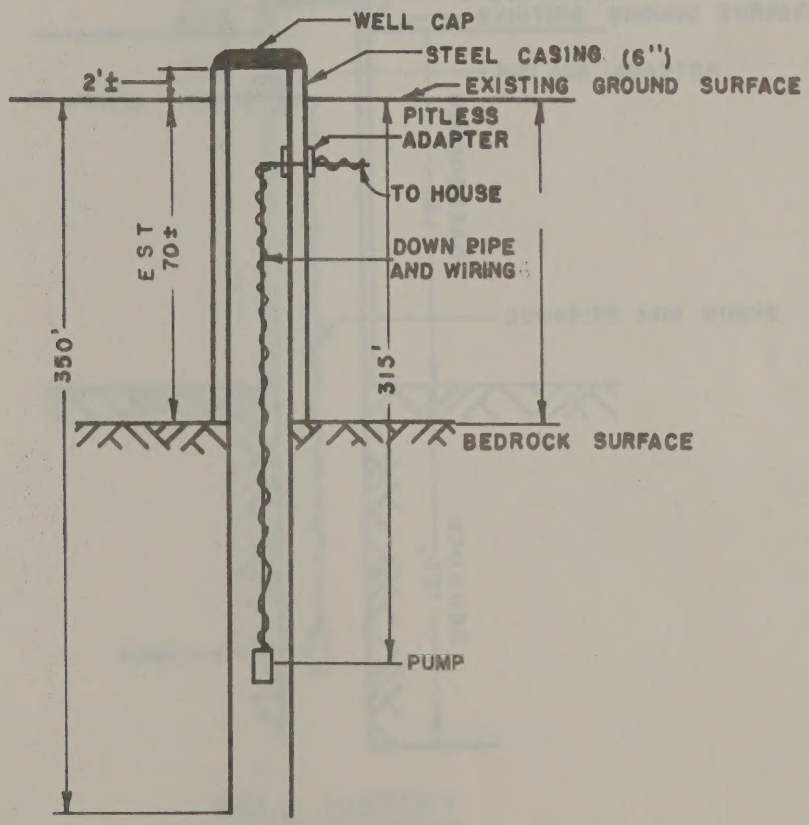
INTERSTATE ROUTE 88
WATER WELL REPAIR
WELLS NO. I, II, & III

WELL NO. 1

APPROXIMATE WELL LOCATION

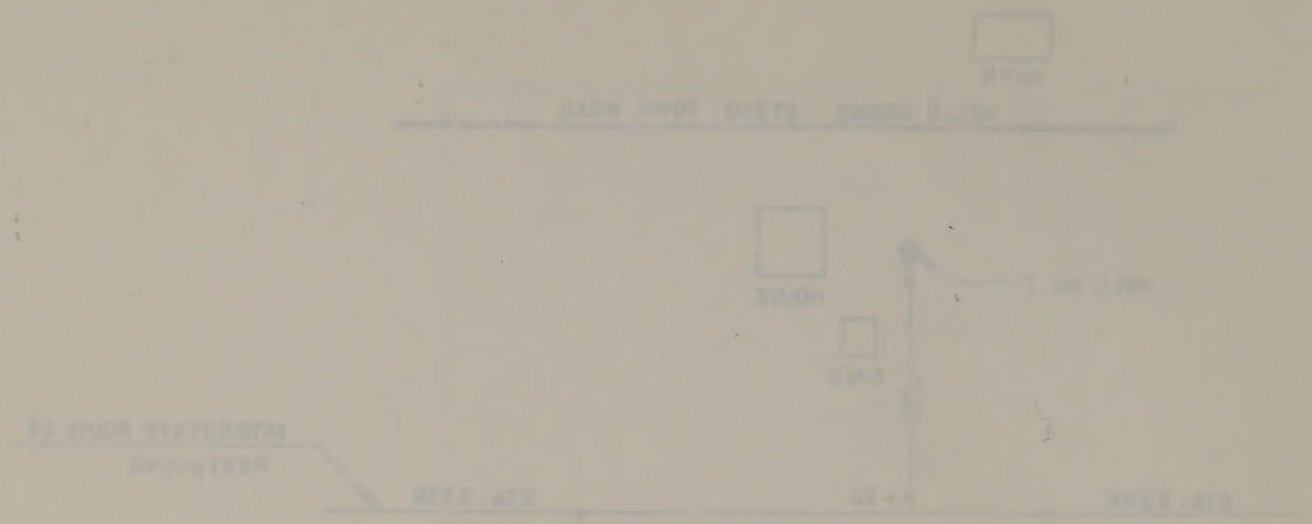


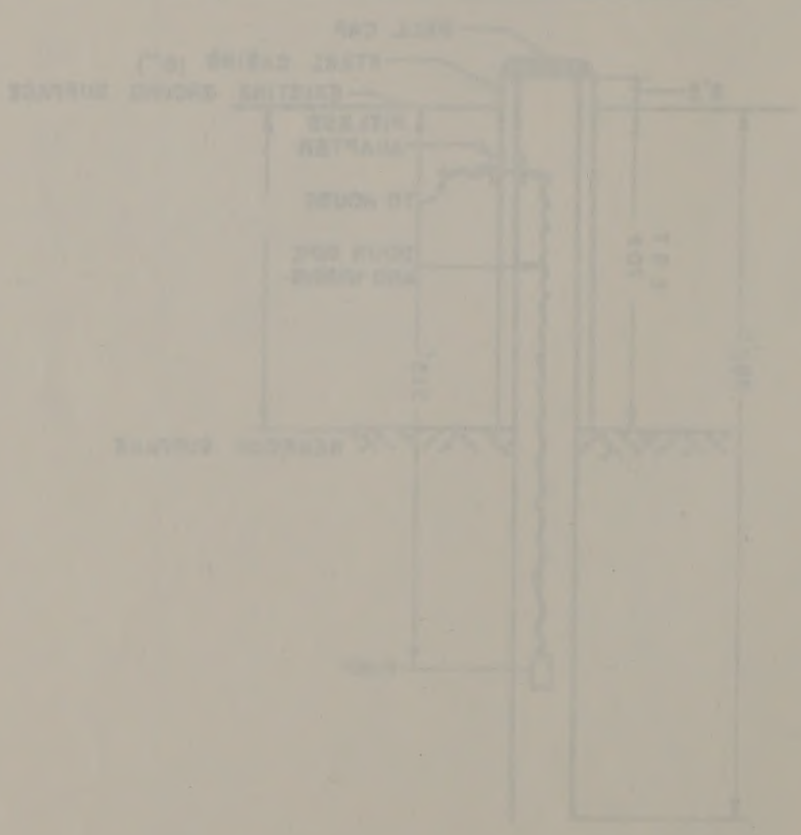
APPROXIMATE WELL CONSTRUCTION



WELL HISTORY

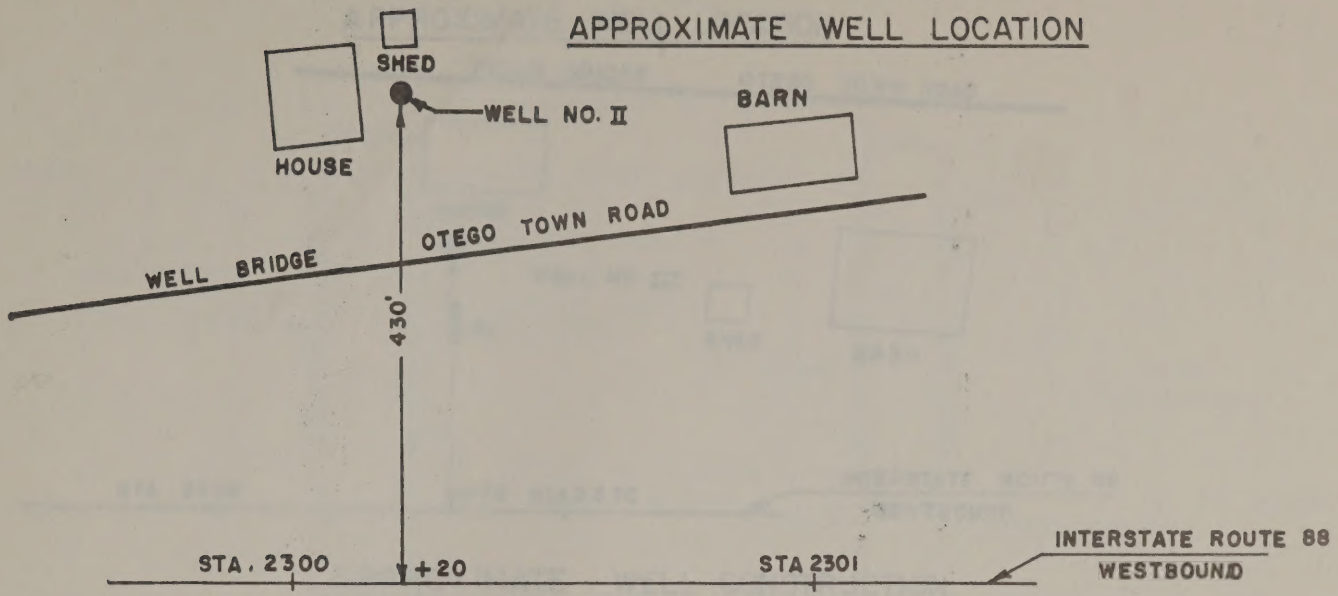
OWNERS - XAVIER and GERTRUDE KRATZ
DRILLED - AUGUST, 1973
YIELD - 20+ GPM (ESTIMATED)
PROBLEM - HIGH LEVEL OF TURBIDITY DUE TO PRESENCE OF LIGHT GREY SILT



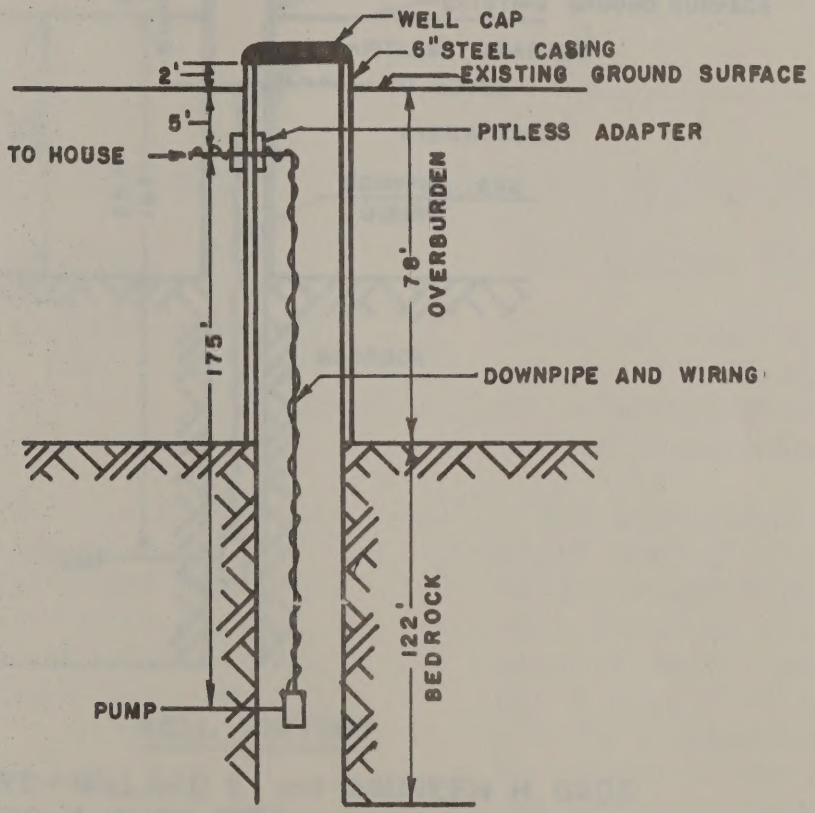


[WELL NO. II

APPROXIMATE WELL LOCATION

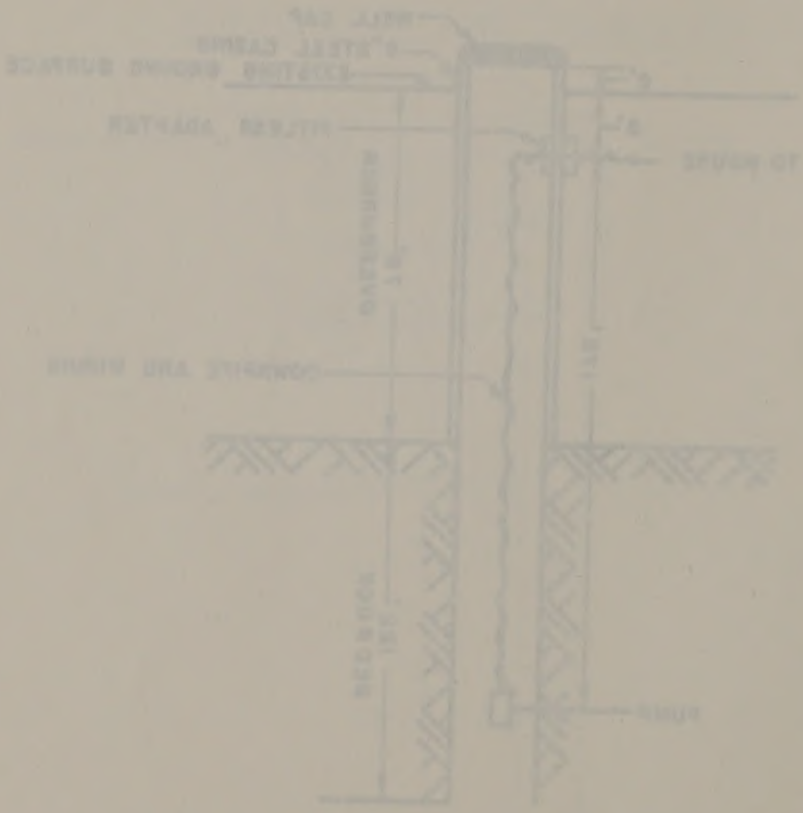


APPROXIMATE WELL CONSTRUCTION



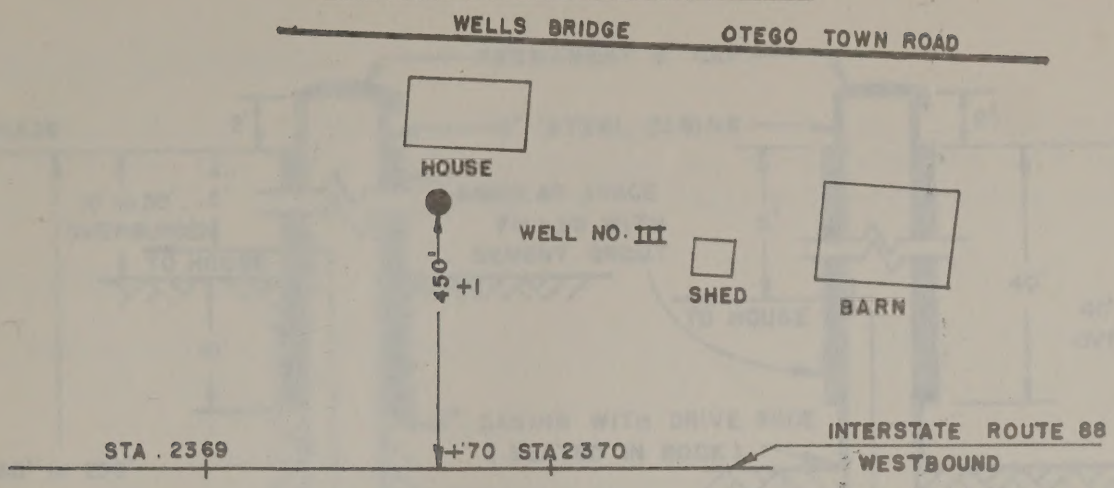
WELL HISTORY

OWNERS - HERMAN A. and ELVA J. HALL
DRILLED - JUNE, 1973
YIELD - 7+GPM
STATIC LEVEL - 70' BELOW TOP OF CASING
PROBLEM - HIGH LEVEL OF TURBIDITY DUE TO PRESENCE OF SILT
POLLUTION - INITIAL BACTERIOLOGICAL TEST POSITIVE

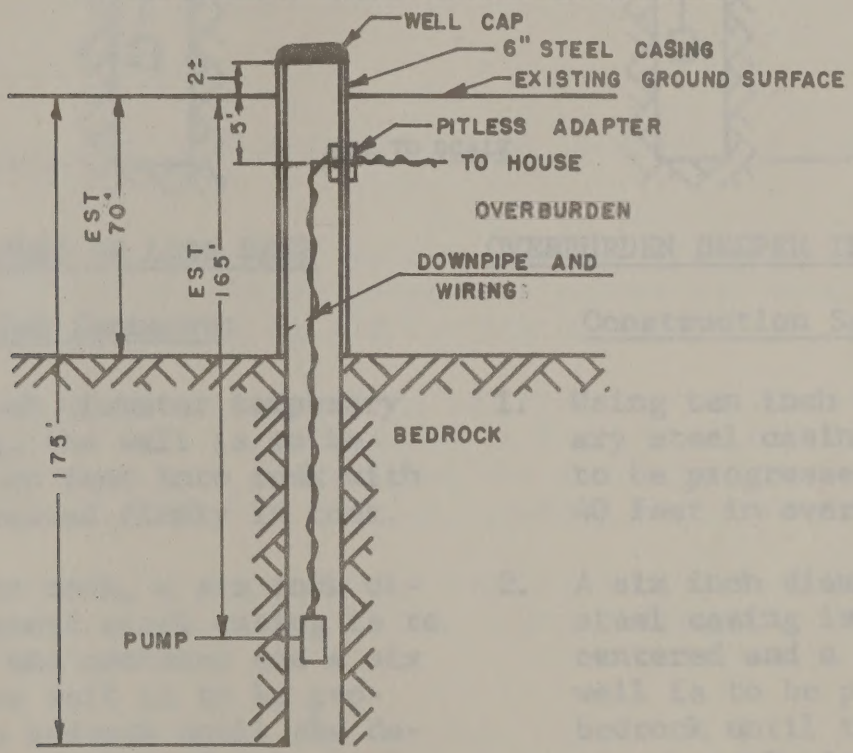


..WELL NO. III

APPROXIMATE WELL LOCATION



APPROXIMATE WELL CONSTRUCTION

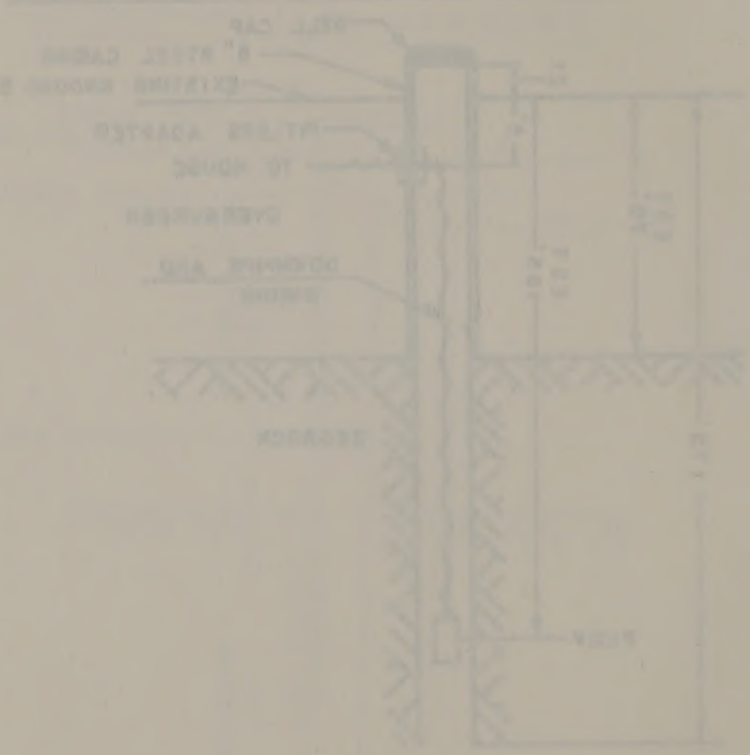


WELL HISTORY

OWNERS – MILLARD E. and MAUREEN H. GAGE
DRILLED – AUGUST, 1973
YIELD – 2.5 GPM
PROBLEMS – HIGH TURBIDITY LEVEL DUE TO PRESENCE OF SILT.

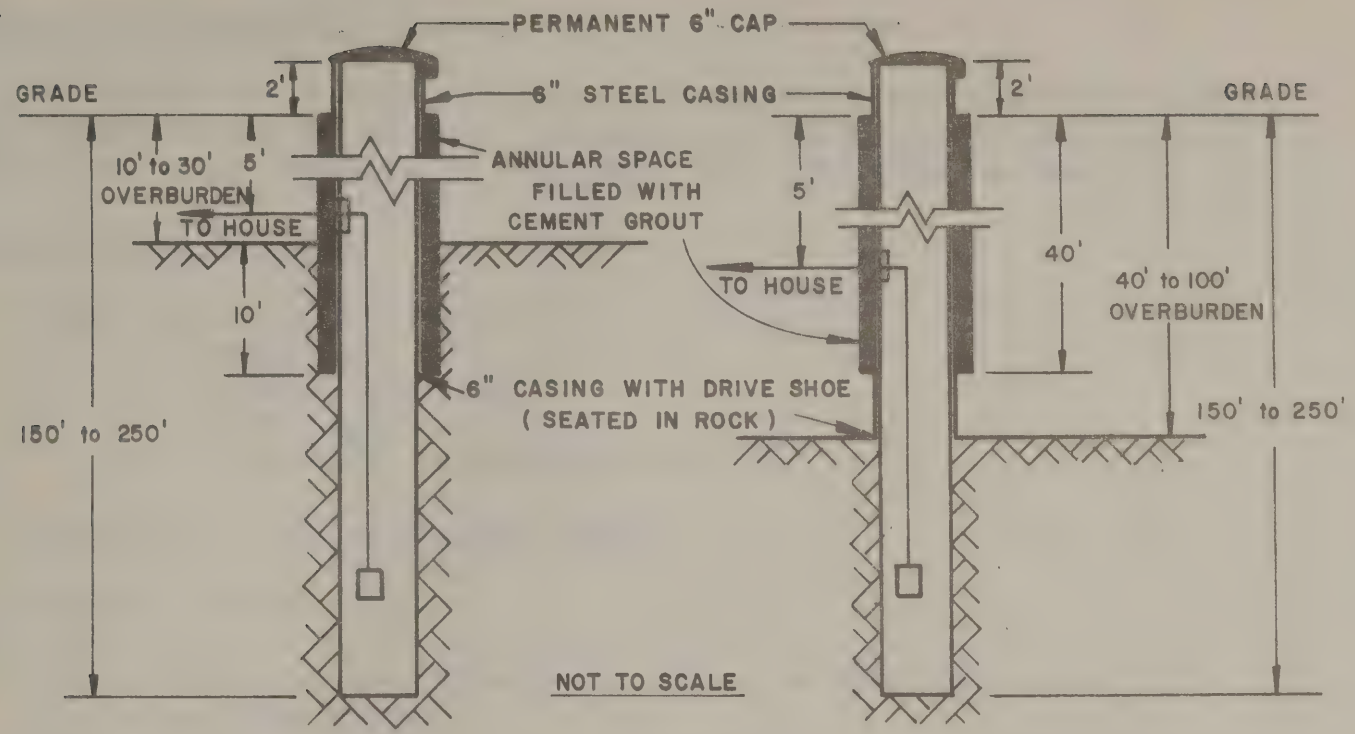
WELL CAPACITY – INSUFFICIENT

POLLUTION – INITIAL BACTERIOLOGICAL TEST POSITIVE



PROPOSED NEW WELL

TYPICAL SECTIONS



OVERBURDEN 30 FEET OR LESS DEEP

Construction Sequence:

1. Using ten inch diameter temporary steel casing, the well is to be progressed ten feet into rock with the casing seated firmly in rock.
2. Ten feet into rock, a six inch diameter permanent steel casing is to be inserted and centered and a six inch diameter well is to be progressed into bedrock until the designated water supply is obtained.

OVERBURDEN DEEPER THAN 40 FEET

Construction Sequence:

1. Using ten inch diameter temporary steel casing, the well is to be progressed to a depth of 40 feet in overburden.
2. A six inch diameter permanent steel casing is to be inserted, centered and a six inch diameter well is to be progressed into bedrock until the designated water supply is obtained. The six inch diameter casing shall be driven in conjunction with the drilling operation until it is firmly seated in rock.

3. Develop and test well.
4. Fill annular space with cement grout while simultaneously extracting ten inch casing.

WELLS NO. I, II & III

Corrective Procedure

It is the intent of this contract to correct the respective problems described for the three wells contained in this contract and to restore the water supplies to the Kratz, Hall and Gage residences.*

Construction Sequence

1. Remove well appurtenances
   a) well cap
   b) submersible pump
   c) down pipe
   d) electrical connection wires

2. Excavate to expose pitless adapter

3. Remove pitless adapter

4. Seal pitless adapter opening in casing by welding a steel plate over the opening.

5. Backfill excavated area adjacent to casing with original material and satisfactorily compact to reduce collection of water during developing and testing operations.

6. Establish adequate well drilling equipment at well and drive casing until it is securely seated on bedrock to the satisfaction of the Engineer. (Additional six inch diameter steel well casing may be required to complete seating the casing on bedrock).

7. Check well for entire depth to determine presence of blockage caused by driving operation. Remove any blockage by conventional drilling methods.

8. Develop well by surging and pumping.

9. Progress well by conventional drilling methods should the yield prove inadequate.

10. Final well development and testing as approved by the Engineer.

11. Excavate to expose casing for installation of pitless adapter.

12. Reinstall well appurtenances
    a) pump

Construction Sequence (cont'd)

b) down pipe
c) electrical connections
d) connect to existing water system

13. Backfill excavated area adjacent to casing with originally excavated material and satisfactorily compact to prevent future settlement.

14. Flush system to remove accumulated silt.

15. Disinfect complete water system in accordance with method outlined in "Rural Water Supply" published by New York State Department of Health.

16. Replace well cap and restore site as directed by the Engineer.

17. If upon completion of the prescribed construction sequence, the well should prove unsatisfactory as determined by yield, chemical, physical or bacteriological test results, the Engineer shall order the well abandoned and sealed and a new well drilled at a site he shall designate.

* It is imperative that the most critical well problems be treated first therefore it will be necessary to rehabilitate the Kratz, Hall and Gage wells in that order.

State of New York
Department of Transportation
Design and Construction Division

FAWR 74-2

DEPARTMENT'S PRELIMINARY ITEMIZED ESTIMATE OF WORK
FOR WATER WELL REPAIR ON

INTERSTATE ROUTE 508
UNADILLA - OTEGO

DELAWARE COUNTY

PAVEMENT: ROADWAY: LENGTH:

TYPE: WELL DEVELOPMENT, DISINFECTION AND TESTING

STANDARD SHEETS:

DEPOSIT REQUIRED: $1,000.--

NOTE: IF THE AMOUNT BID ON ANY PUBLISHED LUMP SUM ITEM OR ON ANY PUBLISHED UNIT PRICE ITEM EXCEEDS BY MORE THAN 25% THE AMOUNT SHOWN BY THE DEPARTMENT'S ESTIMATE FOR THAT ITEM, THE AMOUNT BID FOR SUCH ITEM WILL BE REDUCED BY THE DEPARTMENT SO AS NOT TO EXCEED THE 25% LIMIT.

Capital Project Identification No. 9357.06-211

ITEMIZED PROPOSAL

FOR WATER WELL REPAIR

INTERSTATE ROUTE 508

UNADILLA - OTEGO
(INTERSTATE ROUTE 88)

IN THE COUNTY OF DELAWARE

WHICH CONSTITUTES CONTRACT NO. FAWR 74-2

The work proposed herein must be completed by

*See "Liquidated Damages Note" in Special Notes Section of this Proposal.

ITEMIZED PROPOSAL

TO THE STATE DEPARTMENT OF TRANSPORTATION

In submitting this bid the undersigned declares that he is or they are the only person or persons interested in the said bid; that it is made without any connection with any person making another bid for the same contract; that the bid is in all respects fair and without collusion, fraud or mental reservation; and that no official of the State, or any person in the employ of the State is directly or indirectly interested in said bid or in the supplies or work to which it relates, or in any portion of the profits thereof.

The undersigned also hereby declares that he has or they have carefully examined the plans, specifications and form of contract, and that he has or they have personally inspected the actual location of the work together with the local sources of supply, has or have satisfied himself or themselves as to all the quantities and conditions, and understand that in signing this proposal he or they waive all right to plead any misunderstanding regarding the same.

The undersigned further understands and agrees that he is or they are to furnish and provide for the respective item price bid all the necessary material, machinery, implements, tools, labor, services, etc., and to do and perform all the work necessary under the aforesaid conditions, to complete the improvement of the aforementioned highway in accordance with the plans and specifications for said improvement, which plans and specifications it is agreed are a part of this proposal, and to accept in full compensation therefor the amount of the summation of the products of the approximate quantities multiplied by the unit prices bid. This summation will hereinafter be referred to as the gross sum bid.

The undersigned further agrees to accept the aforesaid "Unit Bid" prices in compensation for any additions or deductions caused by variation in quantities due to more accurate measurement, or by any changes or alterations in the plans or specifications of the work, and for use in the computation of the value of the work performed for monthly estimates.

In case the undersigned voluntarily undertakes to commence work on the site of the project in anticipation of an award of this contract and prior to the time such an award to him is consummated by the delivery to him of a duplicate of the agreement which has been approved by and filed in the office of the State Comptroller, he does so entirely at his own risk and without obligation or responsibility on the part of the State; and he does hereby agree and warrant that, as a prerequisite to the start of any such voluntary work, he accepts, assumes and undertakes all of the provisions of this proposal and of the plans and specifications of the proposed contract, including all of the provisions and responsibilities thereof relative to (1) damage, indemnification and holding the State harmless as set forth in said contract documents, and (2) actually furnishing in advance of any contract operations, the required insurance policies of each and every kind and amount as called for in said contract documents, particularly with relation to workmen's compensation and liability insurance policies as set forth in the related specifications; and he does also agree and warrant that all of such policies will be in force and effect on the date of the start of any of such contract operations, whether or not the contract documents have been executed and filed as aforesaid.

HC 201 (10/73)

BROUGHT FORWARD

ITEM NUMBER	ESTIMATE QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT BID PRICE DOLLARS	UNIT BID PRICE CTS.	AMOUNT BID DOLLARS	AMOUNT BID CTS.
15659.0101	40	Drilling Ten Inch Oversize Hole For Placement of Grout FOR _____ _____ Lin.Ft.				
15659.02	40	Grouting Well FOR _____ _____ Lin.Ft.				
15659.0501	250	Drilling Six Inch Diameter Well FOR _____ _____ Lin.Ft.				
15659.0601	100	Six Inch Casing Left in Place FOR _____ _____ Lin.Ft.				

CARRY FORWARD

HC 2[illegible] (10/73)

BROUGHT FORWARD

ITEM NUMBER	ESTIMATE QUANTITIES	ITEMS WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT BID PRICE DOLLARS	UNIT BID PRICE CTS.	AMOUNT BID DOLLARS	AMOUNT BID CTS
15659.07	150	Developing and Testing FOR _____ _____ Hr.				
15659.10	72	Removal of Well Accessories, Seat Existing Casing and Replace Well Accessories FOR _____ _____ Hr.				
15659.15	24	Flushing and Disinfecting Water System FOR _____ _____ Hr.				
15659.20	250	Sealing An Abandoned Water Well FOR _____ _____ Lin. Ft.				

CARRY FORWARD

HC 202 (10/73)

Item Number	Estimate Quantities	Items With Unit Bid Price Written in Words	Brought Forward Unit Bid Price Dollars	Cts.	Amount Bid Dollars	Cts.
		Subtotal	$			
15 699.02	Nec.	Mobilization (Must Not Exceed 3% of Subtotal Shown Above. See Specification for this Item.) For _____ Lump Sum				
Total or Gross Sum Written in Words _____			$			

Accompanying this proposal is a certified check or bank cashier's check for $ ..... in case this proposal shall be accepted by the State Department of Transportation, and the undersigned shall fail to execute the contract and in all respects comply with the provisions of Section 38 of the Highway Law, as amended, the moneys represented by such certified check or bank cashier's check shall be regarded as liquidated damages and shall be forfeited and become the property of the State of New York; otherwise to be returned to the depositor in accordance with the provisions of said Section 38 of the Highway Law, as amended.

On acceptance of this proposal for said work the undersigned does or do hereby bind himself or themselves to enter into written contract, within ten days of date of notice of award, with the said State Department of Transportation, and to comply in all respects with Subdivision 6 of Section 38 of the Highway Law, as amended in relation to security for the faithful performance of the terms of said contract.

NON--COLLUSIVE BIDDING CERTIFICATION

(REQUIRED BY SECTION 139-d OF THE STATE FINANCE LAW)

§ 139-d "Statement of non-collusion in bids to the state.

1. Every bid hereafter made to the state or any public department, agency or official thereof, where competitive bidding is required by statute, rule or regulation, for work or services performed or to be performed or goods sold or to be sold, shall contain the following statement subscribed by the bidder and affirmed by such bidder as true under the penalties of perjury: Non-collusive bidding certification.

(a) By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

(1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

(2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and

(3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(b) A bid shall not be considered for award nor shall any award be made where (a) (1) (2) and (3) above have not been complied with; provided however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefor. Where (a) (1) (2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the state, public department or agency to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items or (c) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of subparagraph one (a).

(2) Any bid hereafter made to the state or any public department, agency or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule or regulation, and where such bid contains the certification referred to in subdivision one of this section, shall be deemed to have been authorized by the board of directors of the bidder and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non collusion as the act and deed of the corporation."

Dated ....., 19 .....

.....
Legal Name of person, firm or corporation

By .....
Signature (Title)

Please Complete Information Requested Below:

The P.O. address of the bidder is:

Federal Identification No. . . . . .

..... Street.

..... City and State.

If a Corporation

Name		Address
.....,	President	.....
.....,	Secretary	.....
.....,	Treasurer	.....

If a Firm

Name	Address
.....,	.....
.....,	.....
.....,	.....

Certification with regard to the Performance of Previous Contracts or Subcontracts subject to the Equal Opportunity Clause and the filing of Required Reports

The bidder ___, proposed subcontractor ___, hereby certifies that he has ___, has not ___, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246, and that he has ___, has not ___, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

_____
(Company)

By:_____

_____
(Title)

Date:_____

Note: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7(b)(1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of $10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7(b)(1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

4/2/69

Project Identification Number 9357.06-211

Completion Date

All work must be completed within sixty (60) days after execution of the contract.

Special Note - Estimated Equipment

The Contractor shall use the necessary and adequate number and types of construction equipment to complete the work for this project on time.

The list of equipment which the Department has estimated to be the minimum required for this project is as follows:

1 - Cable Tool Well Drilling Machine
1 - Surging Tool
1 - Pump and Motor (Sufficient Capacity to pump the maximum quantity of water the well will produce)
Tools and Equipment necessary for performing the work specified in the Construction Sequence.

Before a contract is awarded, the Contractor shall certify to the Department that at least all of such equipment listed above will be made available on the site for use as needed during construction. Such list of equipment is not to be deemed a warranty, and the Contractor shall not be relieved, because of such listed equipment, of his responsibility to make available and to use any and all additional equipment as may be necessary to complete the work.

Insurance Requirements

Each of the required types of policies shall be furnished with limits of not less than the amounts indicated as follows:

Types of Policies

a. Contractors' liability insurance
b. Sub-contractors' liability insurance
c. Contractors' protective liability insurance
d. Completed operations' liability insurance

Policy Limits

Personal Injury (Including Death)	Each Person $100,000.00	Each Accident $500,000.00
Property Damage	Each Accident $100,000.00	Aggregate $500,000.00

The policy shall state that it will not be changed or cancelled as long as the work is being performed until ten (10) days' written notice has been given the said Commissioner of Transportation.

ITEM 15659.0101: DRILLING TEN INCH OVERSIZE HOLE FOR PLACEMENT OF GROUT

15659.0101-1 DESCRIPTION. Under this item the Contractor shall drill an oversize hole at each well location, to the depth shown on the plans or in the proposal or as ordered by the Engineer.

15659.0101-2 MATERIALS. The temporary ten inch diameter well casing shall consist of standard black steel well casing or drive pipe suitable for driving and extracting. Casing sections shall be connected by either welded or threaded and coupled joints. The item shall include a drive shoe suitable for the casing specified.

15659.0101-3 CONSTRUCTION DETAILS. The Contractor shall drill a ten inch oversize hole at a location and to a depth shown on the plans or proposal or as ordered by the Engineer. The Contractor shall be responsible for: 1) Maintaining plumbness and alignment of the oversize hole and temporary casing, 2) Sampling at ten foot intervals or changes of material, and 3) Keeping an accurate log based on the samples obtained.

The samples shall be properly labeled and maintained in the condition in which they were obtained from the well. They shall be retained at the well construction site for examination. Upon completion of the contract, the samples shall be submitted to the Engineer.

The temporary casing shall be removed during placement of the grout. The casing shall become the property of the Contractor.

15659.0101-4 METHOD OF MEASUREMENT. The quantity of ten inch oversize hole to be paid for will be the number of linear feet of oversize hole drilled, as measured from the original ground surface to the lowest point penetrated.

15659.0101-5 BASIS OF PAYMENT. The unit price bid for this item shall include the cost of furnishing all labor, materials and equipment necessary to drill a ten inch diameter hole and to install temporary ten inch steel casing. The price bid shall include the cost of obtaining, packaging, labeling and delivering the samples to the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
15659.0101	Drilling Ten Inch Oversize Hole for Placement of Grout	Linear Foot

ITEM 15659.02: GROUTING WELL

15659.02-1 DESCRIPTION. Under this item the Contractor shall place neat cement grout in the annular space between the permanent well casing and the temporary oversize casing to the depth shown on the plans or as ordered by the Engineer.

15659.02-2 MATERIALS. The neat cement grout mixture shall consist of water and portland cement mixed in the proportion of not less than five nor more than six gallons of water to one bag (94 lbs.) of cement. Hydrated lime (10% by volume) and bentonite (3% by volume) may be added to facilitate pumping and reduce drying shrinkage respectively.

15659.02-3 CONSTRUCTION DETAILS. The grout shall be placed continuously from the bottom of the space to be grouted toward the surface. The grout shall be conveyed through a pipe with a minimum inside diameter of one inch. The end of the pipe shall be kept immersed in the grout for all periods during which the grout is being placed. Drilling operations or other work on the well will not be permitted for a period of 72 hours after placement of the grout. If quick setting cement (Type 3) is used this period may be reduced to 24 hours.

15659.02-4 METHOD OF MEASUREMENT. The quantity of grout to be paid for under this item will be the number of linear feet of casing grouted as measured from the original ground surface to the lowest point penetrated by the oversize ten inch casing.

15659.02-5 BASIS OF PAYMENT. The unit price bid shall include the cost of all labor, material and equipment necessary to place the grout.

Payment will be made under:

Item No.	Item	Pay Unit
15659.02	Grouting Well	Linear Foot

ITEM 15659.0501: DRILLING SIX INCH DIAMETER WELL

15659.0501-1 DESCRIPTION. Under this item, the Contractor shall drill a well with a minimum diameter of six inches at each well location shown on the plans or as ordered by the Engineer.

15659.0501-2 MATERIALS. Such materials as are required to progress construction of a six inch diameter well shall be as determined by the Contractor except that they shall conform to any pertinent local or state law, regulation or code.

15659.0501-3 CONSTRUCTION DETAILS. It is the intent of this item to obtain a potable water supply of not less than ten g.p.m. All work shall be performed by personnel experienced in the construction of wells. The Contractor will be responsible for the following: 1) maintaining plumbness and alignment, 2) sampling at intervals of ten feet and at all changes of material, or as ordered by the Engineer, and 3) keeping an accurate log based upon the samples obtained. The samples shall be packaged in tightly capped, unbreakable containers furnished by the Contractor. The samples shall be properly labeled and maintained in the condition in which they were obtained from the well. They shall be retained at the well construction site for examination. Upon completion of the contract, the samples shall be submitted to the Engineer.

When water bearing strata are encountered, the Contractor shall determine if the strata will yield sufficient water to warrant developing and testing.

15659.0501-4 METHOD OF MEASUREMENT. The quantity to be paid for under this item will be the number of linear feet of six inch diameter well drilled, as measured from the bottom of the ten inch oversize hole to the lowest point penetrated.

15659.0501-5 BASIS OF PAYMENT. The unit price bid for this item shall include the cost of furnishing all labor, materials, and equipment necessary to drill a six-inch diameter well. The price bid shall include the cost of obtaining, packaging, labeling and delivering the samples to the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
15659.0501	Drilling Six Inch Diameter Well	Linear Foot

ITEM 15659.0601 SIX INCH CASING LEFT IN PLACE

15659.0601-1 DESCRIPTION. Under this item the Contractor shall furnish and install six inch black steel well casing.

15659.0601-2 MATERIALS. The well casing shall consist of standard blacksteel well casing or drive pipe with a minimum inside diameter of six inches, a wall thickness of not less than 0.280 inches and weighing not less than 18.97 pounds per linear foot. Casing sections shall be connected by either threaded and coupled or welded joints. The item shall include a drive shoe suitable for the casing specified.

15659.0601-3 CONSTRUCTION DETAILS. The casing left in place shall project at least one foot and not more than two feet above the ground surface. Upon completion of the work the well shall be capped in such a manner as to be tamper-proof and acceptable to the Engineer.

Placement of casing in an oversize hole shall require the use of centering guides. The centering guides shall be installed at sufficient intervals to insure proper positioning of the permanent casing within the temporary oversize casing. The centering guide spacing interval shall be approved by the Engineer.

For wells deriving water from bedrock, the casing shall be driven until in the opinion of the Engineer, the drive shoe is securely seated in bedrock.

If the Contractor elects to use casing which requires welded joints, welding shall be performed in accordance with the standards of The American Welding Society to the satisfaction of the Engineer.

15659.0601-4 METHOD OF MEASUREMENT. Payment will be made for the number of linear feet of casing left in place.

15659.0601-5 BASIS OF PAYMENT. The price bid per linear foot shall include the cost of furnishing all labor, equipment and materials necessary to satisfactorily install the permanent six inch casing and includes the cost of drive shoe, section joints, casing centering guides and well cap.

Payment will be made under:

Item No.	Item	Pay Unit
15659.0601	Six Inch Casing Left In Place	Linear Foot

ITEM: 15659.07 DEVELOPMENT AND TESTING

15659.07-1 DESCRIPTION. Under this item the Contractor shall 1) develop six inch diameter wells by simultaneous surging and pumping operation, 2) disinfect the well, 3) perform pumping tests and 4) sample and perform physical, chemical and bacteriological tests on the water.

15659.07-2 MATERIALS. The materials necessary to properly develop and test the well shall be as determined by the Contractor, except that the materials necessary for disinfecting the well shall be in accordance with the procedure outlined in "Rural Water Supply" published by The New York State Department of Health.

Sterilized bottles for obtaining water samples for testing may be obtained from New York State Department of Health Regional or District offices and from County Health Departments where available.

15659.07-3 CONSTRUCTION DETAILS. The Contractor shall develop six inch diameter wells by simultaneously surging and pumping. The developing operation shall be progressed until such time as the optimum well yield is obtained and the water conforms to the New York State Department of Health standard for turbidity.

When well development is complete to the satisfaction of the Engineer, the Contractor shall perform a step drawdown test and determine the approximate yield of the well. The Contractor shall then conduct a continuous pumping test for a period of twelve hours to determine the sustained yield of the well. The elevation of the pump intake and the pumping rate for these tests shall be as ordered by the Engineer. The pump shall be of a capacity capable of adequately progressing the work.

The well shall then be disinfected in accordance with the procedure outlined in "Rural Water Supply" published by the New York State Department of Health.

When disinfection of the well has been completed to the satisfaction of the Engineer, the Contractor shall arrange to have one or more water samples collected for physical, chemical and bacteriological examination. The samples are to be submitted by the Contractor to a laboratory approved by the State Commissioner of Health for the purpose of testing water

quality. Results of the examination shall be submitted to the Engineer for determination of water quality and corrective treatment if necessary.

15659.07-4 METHOD OF MEASUREMENT. The quantity to be paid for will be the number of hours of well development and yield testing.

15659.07-5 BASIS OF PAYMENT. The unit price bid per hour shall include the cost of furnishing all labor, materials and equipment necessary for developing, testing, disinfecting and sampling. No direct payment will be made for disinfecting, sampling and physical, chemical and bacteriological tests. The cost of these operations shall be included in the price bid per hour for well development and yield testing.

Payment will be made under:

Item No.	Item	Pay Unit
15659.07	Development And Testing	Hour

ITEM 15659.10 REMOVAL OF WELL ACCESSORIES, SEAT EXISTING CASING AND REPLACE WELL ACCESSORIES

15659.10-1 DESCRIPTION. Under this item the Contractor shall furnish all labor, materials and equipment necessary to remove well accessories, seat steel well casing on bedrock and replace well accessories at existing well site.

15659.10-2 MATERIALS. The six inch diameter steel well casing required shall conform to the physical requirements of Item 15659.0601, Six Inch Casing Left in Place.

15659.10-3 CONSTRUCTION DETAILS. This item shall include all work necessary to prepare an existing well for the operation of driving the steel casing to bedrock; the driving of the steel casing to bedrock to the satisfaction of the Engineer and clearing the well opening for its entire depth. This item shall also include all work necessary to replace all well accessories and to reconnect the well to the household water system upon completion of the developing and testing operations.

The work shall be performed as described in the proposal under the respective well construction sequence.

15659.10-4 METHOD OF MEASUREMENT. The quantity to be paid for under this item will be the number of hours required to remove well accessories, seat the casing and replace the well accessories.

15659.10-5 BASIS OF PAYMENT. The unit price bid for each well shall include the cost of furnishing all labor, material and equipment necessary to perform the work except that additional six inch well casing required to seat the well shall be paid for under Item 15659.0601, Six Inch Casing Left in Place.

Payment will be made under:

Item No.	Item	Pay Unit
15659.10	Removal of Well Accessories, Seat Existing Casing and Replace Well Accessories	Hour

ITEM 15659.15 FLUSHING AND DISINFECTING WATER SYSTEM

15659.15-1 DESCRIPTION. Under this item, the Contractor shall furnish all labor, material and equipment necesaary to flush and disinfect a water system.

15659.15-2 MATERIALS. The materials necessary to flush the water system shall be as determined by the Contractor, except that they shall conform to any pertinent local or state law, regulation or code. The materials necessary to disinfect the water system shall conform to the requirements for well disinfection as outlined in "Rural Water Supply" published by The New York State Department of Health.

15659.15-3 CONSTRUCTION DETAILS. The work shall consist of flushing out the existing house plumbing system using the permanently installed pump. The flushing operation shall be continued until the water is returned to acceptable limits of turbidity.

The water system shall then be disinfected in accordance with the procedure outlined in "Rural Water Supply" published by The New York State Department of Health.

15659.15-4 METHOD OF MEASUREMENT. The quantity to be paid for will be the number of hours of flushing and disinfecting the water system.

15659.15-5 BASIS OF PAYMENT. The unit price bid per hour shall include the cost of furnishing all labor, material and equipment necessary to flush and disinfect the water system to the satisfaction of the Engineer.

Payment will be made under:

Item No.	Item	Pay Unit
15659.15	Flushing And Disinfecting Water System	Hour

SECTION 15659.20 - SEALING AN ABANDONED WATER WELL

15659.20-1 DESCRIPTION. This work shall consist of sealing an abandoned well so as to restore, as nearly as practicable, the groundwater conditions which existed prior to the construction of the well.

15659.20-2 MATERIALS. The sealing material shall be portland cement concrete and shall consist of a mixture of two and one-half (2 1/2) bags of portland cement (Type I or II) per cubic yard, fine and coarse aggregate in equal proportions by volume. Water shall be added in an amount required to obtain a slump of seven to nine inches. The fine aggregate shall consist of concrete sand. The coarse aggregates to be placed in a well less than twelve inches in diameter shall have a maximum size of one inch. In wells greater than twelve inches in diameter a mixture of one inch and two inch may be used. All materials used in the portland cement concrete shall conform with size and quality requirements as outlined in the Standard Specifications, New York State Department of Transportation dated January 2, 1973.

15659.20-3 CONSTRUCTION DETAILS. Removal of casing and/or liner pipe, or perforation of the same if left in place, may be required to assure placement of an effective seal. Any material salvaged in the performance of work under this item shall become or remain the property of the Contractor.

The concrete seal may be introduced from the top of all wells. Flowing wells shall be sealed by extending the confining walls of the well if practicable, prior to placing the concrete or by other means approved by the Engineer. Positive means of venting trapped air must be taken during placement of the concrete. This shall be accomplished by means of a small diameter perforated vent pipe which shall be removed as the concrete is placed or by other means approved by the Engineer.

The top of the concrete seal shall terminate five feet below the ground surface. The remaining portion of the well shall be filled with native material. In the case of a well where the casing or lining is left in place, the well shall be sealed as above with the casing or lining cut off and removed five feet below the ground surface. The remaining portion of the well shall be filled with native material.

15659.20-4 METHOD OF MEASUREMENT. Payment for sealing an abandoned well will be made for the number of linear feet measured between the ground surface and the bottom of the well.

15659.20-5 BASIS OF PAYMENT. The unit price bid per linear foot shall include the cost of all labor, equipment and material necessary to complete the work.

Payment will be made under:

Item No.	Item	Pay Unit
15659.20	Sealing An Abandoned Water Well	Linear Foot

ITEM 15699.02: MOBILIZATION

15699-1 DESCRIPTION. Under this item the Contractor shall furnish to the project all labor, equipment, materials and tools necessary to perform the work shown on the plans or as ordered by the Engineer. Upon completion of the work the Contractor shall remove the equipment and restore the property as directed by the Engineer.

15699-2 MATERIALS. Such materials as are required for mobilization and that are not to be a part of the completed contract shall be as determined by the Contractor, except that they shall conform to any pertinent local or state law, regulation or code.

15699-3 CONSTRUCTION DETAILS. The work required to provide the above facilities and services for mobilization shall be done in a safe and workmanlike manner and shall conform with any pertinent local or state law, regulation or code. Good housekeeping consistent with safety shall be maintained.

15699-4 METHOD OF MEASUREMENT. Payment for mobilization will be made on a lump sum basis.

15699-5 BASIS OF PAYMENT. The amount bid for this item shall include the cost of furnishing all labor, equipment, materials and tools necessary to satisfactorily complete the work and shall not exceed three percent (3%) of the total contract price excluding the bid price for mobilization. Should the bidder exceed the foregoing three percent (3%), the Department will make the necessary adjustment to determine the total amount bid based on the arithmetically correct Proposal.

Payment will be made under:

Item No.	Item	Pay Unit
15699.02	Mobilization	Lump Sum

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